

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Jeffrey L. Deeney

Confirmation No.:

Application No.:

Examiner:

Filing Date:

Group Art Unit:

Title: METHOD AND APPARATUS FOR SUPPORTING CIRCUIT COMPONENT HAVING SOLDER COLUMN ARRAY INTERCONNECTS USING INTERPOSED SUPPORT SHIMS

COMMISSIONER FOR PATENTS
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of national application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
☐ Statement under 37 CFR 1.97(e), or
☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97 (b) time period, but before final action or notice of allowance, whichever occurs
- ☐ under 37 CFR 1.97 (d) together with a:
☐ Statement under 37 CFR 1.97(e), and
☐ a petition under 37 CFR 1.97(d)(2), and
☐ a \$180.00 petition fee set forth in 37 CFR 1.17(p).
(Filed after final action or notice of allowance, whichever occurs first, but before payment of the issue fee)

Please charge to Deposit Account **08-2025** the sum of \$0.00. At any time during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account **08-2025** pursuant to 37 CFR 1.25.

☒ Applicant(s) submit herewith Form PTO 1449 - Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

☐ A concise explanation of the relevance of foreign language patents, foreign language publications and other foreign language information listed on PTO Form 1449, as presently understood by the individuals(s) designated in 37 CFR 1.56 (c) most knowledgeable about the content is given on the attached sheet, or where a foreign language patent is cited in a search report or other action by a foreign patent office in a counterpart foreign application, an English language version of the search report or action which indicates the degree of relevance found by the foreign office is listed on form PTO 1449 and is enclosed herewith.

It is requested that the information disclosed herein be made of record in this application.

"Express Mail" label no. **EL623595746US**

Date of Deposit **Nov. 16, 2001**

I hereby certify that this is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, Washington, D.C. 20231.

By Jennifer Yapo
Typed Name: Jennifer Yapo

Respectfully submitted,

Jeffrey L. Deeney

By Roland A. Fuller III
Roland A. Fuller III

Attorney/Agent for Applicant(s)
Reg. No. **31,3160**

Date: **Nov. 16, 2001**

FORM PTO-1449

LIST OF PATENTS AND PUBLICATIONS FOR
APPLICANT'S INFORMATION DISCLOSURE
STATEMENT

(Use several sheets if necessary)

ATTY. DOCKET NO.

10015588-1

APPLICATION NO.

CONFIRMATION NO.

APPLICANT

Jeffrey L. Deeney

FILING DATE

GROUP

10872 U.S. PTO
09/992864

11/16/01

REFERENCE DESIGNATION

U.S. PATENT DOCUMENTS

| EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS |
|---------------------|----|--------------------|----------|---------------------|-------|--------------|
| | 1A | 5,244,143 | 09/14/93 | Thomas G. Ference | | |
| | 1B | 5,557,503 | 09/17/96 | Phillip Isaacs | | |
| | 1C | 5,615,735 | 04/01/97 | Stuart Yoshida | | |
| | 1D | 5,926,370 | 07/20/99 | S. Daniel Cromwell | | |
| | 1E | 6,061,235 | 05/09/00 | S. Daniel Cromwell | | |
| | 1F | 6,084,178 | 07/04/00 | S. Daniel Cromwell | | |
| | 1G | 6,198,630 | 03/06/01 | S. Daniel Cromwell | | |
| | 1H | 6,231,333 | 05/15/01 | Peter Alfred Gruber | | |
| | 1I | 6,235,996 | 05/22/01 | Shaji Farooq | | |
| | 1J | 6,276,596 | 08/21/01 | Peter A. Gruber | | |
| | 1K | | | | | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUB CLASS | TRANSLATION | |
|--|----|--------------------|------|------|-------|--------------|-------------|----|
| | | | | | | | YES | NO |
| | 1L | | | | | | | |
| | 1M | | | | | | | |
| | 1N | | | | | | | |
| | 1O | | | | | | | |
| | 1P | | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|---|
| 1Q | Thomas P. Dolbear et al., Effect of Mechanical Shock and Vibration on the Second-level Temperature Cycling Reliability of Ceramic Ball Grid Arrays with a Continuous Compressive Load Applied, 5 unnumbered pages. |
| 1R | R. Bargerhuff et al., Development of a Large Heatsink Support Structure, 12 unnumbered pages. |
| 1S | Thomas J. Augustin et al., patent application filed on November 16, 2001 titled Method And Apparatus For Shock And Vibration Isolation Of A Circuit Component, Attorney Docket No. 10014433-1, Pages 1-15 and 2 sheets of drawings. |

EXAMINER

DATE CONSIDERED

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|---------------------|----|--------------------|------|------|-------|--------------|
| | 2A | | | | | |
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FOREIGN PATENT DOCUMENTS

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| | 2P | | | | | | | |

OTHER REFERENCES (including Author, Title, Date, Pertinent Pages, etc.)

| | |
|----|---|
| 2Q | Jeffrey L. Deeney et al, patent application filed on November 16, 2001 titled Method And Apparatus Of Supporting Circuit Component Having A Solder Column Array Using Interspersed Rigid Columns, Attorney Docket No. 10015587-1, Pages 1-9 and 1 sheet of a drawing. |
| 2R | Jeffrey L. Deeney et al., patent application filed on November 16, 2001 titled Method And Apparatus For Supporting A Circuit Component Having A Solder Column Interconnects Using An External Support, Attorney Docket No. 10015590-1, Pages 1-15 and 2 sheets of drawings. |
| 2S | |

EXAMINER

DATE CONSIDERED